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ABSTRACT

This instructional module on sex stereotyping and its effect on mathematics education is composed of four transparency masters, two handouts, and a bibliography and is designed to accompany a 25-minute tape. The four transparencies are stereotyping sample mathematics problems, sex differences in mathematical skills, and mathematics courses and job choices. The two handouts illustrate sex stereotyping in mathematics word problems and indicate things to do to combat sex stereotyping in mathematics. (MP)

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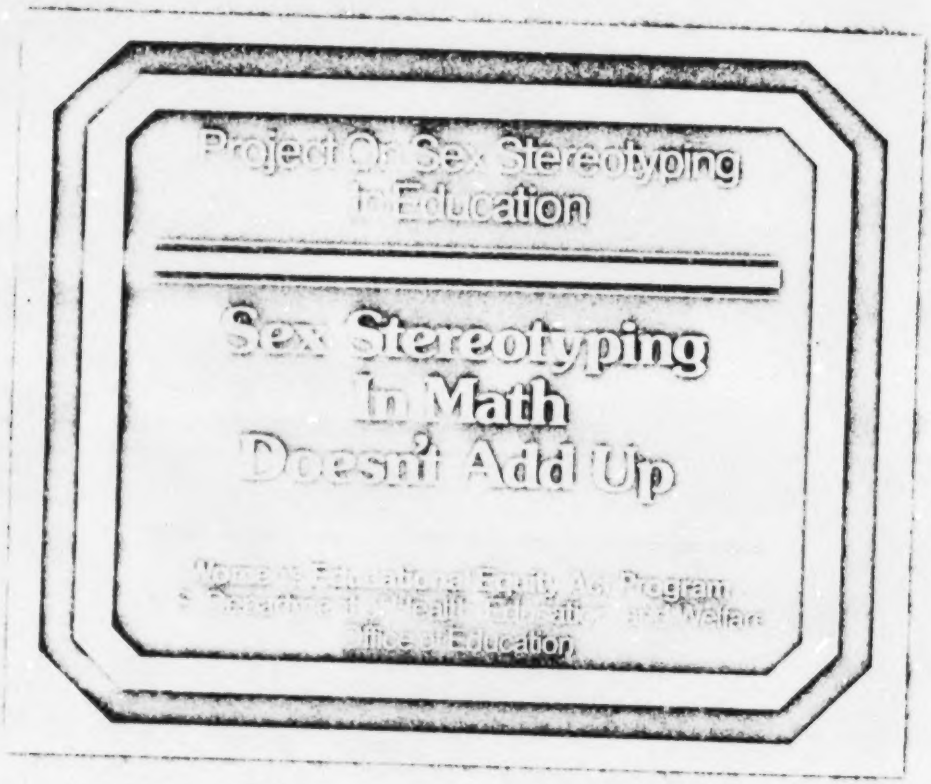

SE 027 559

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Sex Stereotyping in Math Doesn't Add Up

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INSTRUCTIONS

The enclosed module on sex stereotyping and its effect on math education is composed of a 25-minute tape, four transparency masters, two handouts, and a bibliography. The module is designed to be used independently or to supplement an instructional unit.

The module was developed to facilitate discussion as well as to present information. Several times during the tape, the group is requested to stop the tape recorder and participate in an activity. When the discussion of the activity appears to be winding down, the instructor should start the tape again.

The unit, with activities, should take between one and two hours. We strongly recommend that the instructor or group leader listen to the tape before using it with a class or group. We think the module is a good one, but it is only as effective as your group discussion and participation make it.

Four transparencies accompany the tape:

- Stereotyping
- Sample Math Problems
- Sex Differences in Math Skills
- Math Courses and Job Choices

At the appropriate time, each transparency is introduced on the tape; following this, there is a short pause to allow the transparency to be put on the overhead projector.

Copies of the two handouts should be made and distributed to members of the group prior to beginning the tape. Copies can be made by using any copying machine or by using a Thermafax machine to make ditto masters of the handout.

Transparencies can be made by covering the enclosed transparency masters with a sheet of transparency film and running both the sheet and the master through a Thermafax machine.

This module is part of a series of instructional modules on sex-role stereotyping in education. Other modules are available in language arts, social studies, science, physical education, human growth and development, and educational history.

HANDOUTS

MATH WORD PROBLEMS

Read the following problems and discuss how these problems encourage or discourage students' feelings of competence in math.

1. Mrs. Rather was baking two cakes for the church bazaar. The recipe she had called for 2 1/2 cups of flour and 3/4 cup of sugar. Mrs. Rather knew she had to double these ingredients, but was having trouble doing so. Her young son, Billy, came in, noticed her hesitation and quickly figured out how much flour and sugar was needed. How much of each did Mrs. Rather need for two cakes?

2. Miss Clark was the editor of the *Daily Sun*. She knew her circulation department had gotten many new subscriptions for the paper and lost others. If the circulation of the *Daily Sun* was 23,542, then 3,625 new subscriptions came in and the paper lost 343 subscribers, what is the current circulation of the paper, and what is the percent of increase?

3. Mrs. Jones was trying as usual to balance her checkbook. Her checkbook balance reads $165.80. Her bank statement reads as follows:

Previous balance	$172.00
Check #1	$ 46.00
Check #2	$ 25.00
Check #3	$ 42.00
Deposit	$ 99.00

   Each check has a 15¢ service charge.

   How far off was Mrs. Jones's balance?

4. Janet and Tom were helping each other in chemistry lab. If Janet takes 45 minutes alone to do an experiment, and Tom takes 50 minutes to do it alone, how long will it take them to do the experiment together?

5. Ralph was doing a tough math homework problem; he asked his mother for help but she said, "Wait until your father comes home." If Ralph spent 3/4 of an hour trying to work out the problem, 1/10 of an hour asking his mother for help, and 2/3 of an hour waiting for his father, how many hours and minutes did he spend?

THINGS WE CAN DO

1. Use the same standards for math performance regardless of the sex or ethnic background of the students. Be sympathetic about "mental blocks" about math, but don't reinforce them.

2. Have the students do activities, like making bread, to learn math, rather than just reading problems or doing worksheets.

3. Develop inservice programs to introduce new math concepts and teaching techniques.

4. De-emphasize the "rare bird" phenomena for females who do well in math and males who don't. Assume that there will be females and males in advanced math classes.

5. Make short biographies of women and men mathematicians available in the classroom.

6. Invite women and men to visit your class to talk about their math-related jobs and the kind of preparation necessary for those jobs.

7. Work with your school counselor to see that good nonbiased vocational information about math-related careers is available.

8. Examine your classroom, textbooks, and lesson plans for stereotypic attitudes, opinions, and activities.

9. Send away for free publishers' guidelines for removing stereotypes in textbooks.

10. Work with your school curriculum committee to order textbooks that provide equal educational opportunity.

Other suggestions:

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TRANSPARENCIES

STEREOTYPING

STEREOTYPING is the arbitrary assigning of certain habits, abilities, and expectations to people solely on the basis of group membership, regardless of their attributes as people.

Read the following descriptions and discuss the images and assumptions that come to mind. What would you assume or imagine about:

1. a man with tatoos on his arms?
2. a tall, young, Black man?
3. a young girl climbing trees?
4. a high school boy who writes poetry?
5. a Southern Baptist minister?
6. an Hispanic teenager?
7. a woman who failed to signal a turn while driving down the street?
8. a forty-year-old Jewish woman from New York?

Can you think of other stereotypes?

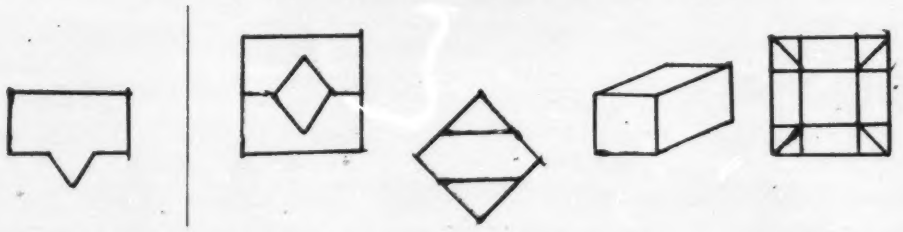
SAMPLE MATH PROBLEMS

COMPUTATION PROBLEM:

$$\frac{1}{2} \times (3\ \frac{1}{8} + \frac{3}{4})$$

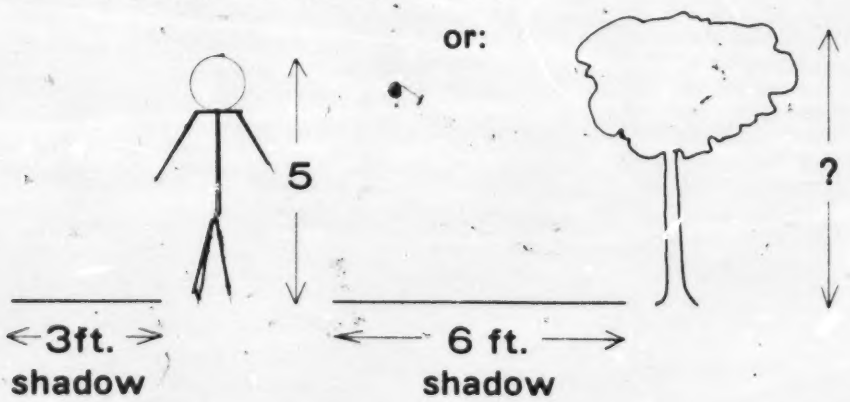
SPATIAL RELATIONS PROBLEM:

The figure at the left of the heavy black line is hidden in one of the four drawings that follow. Put a cross (X) on the one that contains the hidden figure.



MATH REASONING PROBLEMS:

Mary is five feet tall. If she casts a shadow three feet long at the same time that a tree makes a six foot shadow, how tall is the tree?



SEX DIFFERENCES IN MATH SKILLS

	PRESCHOOL	ELEMENTARY	HIGH SCHOOL
COMPUTATIONAL SKILLS	No sex difference	Few sex differences (Females occasionally superior)	Minimal sex difference (Males occasionally superior)
SPATIAL RELATIONS SKILLS	No sex difference	Few sex differences (Males occasionally superior)	Male superiority
MATH REASONING SKILLS	No sex difference	Little research done	General male superiority

MATH COURSES AND JOB CHOICES

THREE OR MORE YEARS OF HIGH SCHOOL MATH WIDENS JOB OPPORTUNITIES

- SOCIAL WORKER
- HISTORIAN
- BANK TELLER
- SECRETARY
- NURSE
- SCIENTIST
- CHEMIST
- OPTOMETRIST
- ACCOUNTANT
- PROGRAMMER
- SURVEYOR
- ELECTRICIAN
- DRAFTER
- LITHOGRAPHER
- MEDICAL TECHNICIAN

ONE OR TWO YEARS OF HIGH SCHOOL MATH NARROWS JOB OPPORTUNITIES